

What is claimed is:

1. A method for estimating a resistance in at least one phase winding in a reluctance machine, the method comprising:
  - receiving a signal indicating a voltage across the at least one phase winding;
  - receiving a signal indicating a current through the at least one phase winding;
  - estimating a magnetic flux in response to the voltage signal and the current signal; and
  - estimating the resistance in the phase winding in accordance with a phase relation between the current signal and the magnetic flux estimate.
2. The method according to claim 1, further comprising:
  - adjusting the magnetic flux estimation using the estimated resistance.
3. The method according to claim 1, further comprising:
  - establishing a mutual position between a first and a second part of a reluctance machine in response to the current signal and the magnetic flux estimate.
4. The method according to claim 1, further comprising:
  - establishing a current reference value in response to a torque reference value and the magnetic flux estimate.
5. The method according to claim 1, wherein the resistance estimation further comprises:
  - determining a relation or a difference value between the magnetic flux estimate and the current signal; and

adjusting the estimated resistance depending on the difference value or the relationship value.

6. The method according to claim 5, wherein the adjustment of the estimated resistance influences a subsequently produced magnetic flux estimate so that the absolute value of the difference value is minimized.

7. The method according to claim 5, wherein the adjustment of the estimated resistance comprises:

increasing the estimated resistance when the difference value has a first sign and reducing the estimated resistance when the difference value has a second sign.

8. The method according to claim 5, wherein the adjustment of the estimated resistance comprises:

determining a phase difference between the magnetic flux estimate and the current signal; or

determining an amplitude of the magnetic flux estimate at a predetermined amplitude level of the current signal.

9. The method according to claim 1 further comprising:  
generating a winding temperature value on a basis of said estimated resistance.

10. The method according to claim 9, wherein said winding temperature value is based on information including:

the phase winding resistance at a certain temperature; and  
a temperature coefficient for a material in said phase winding.

11. A device for estimating a resistance in at least one phase winding in a reluctance machine, the device comprising:

an input for receiving a signal indicating a voltage across the at least one phase winding;

an input for receiving a signal indicating a current through the at least one phase winding;

a microprocessor; and

a memory having a computer program to direct the microprocessor to perform a process of estimating an instantaneous resistance wherein the microprocessor is coupled to the memory and to the signal inputs such that the microprocessor performs the process of estimating a magnetic flux in response to the voltage signal and the current signal, and estimating an instantaneous resistance in the phase winding in accordance with a phase relation between the current signal and the magnetic flux estimate during execution of the program.

12. A computer program product for use with a device according to claim 11, the computer program product comprising:

a recording medium;

a computer program recorded on the recording medium to direct the microprocessor to perform the process set forth in claim 11.